

Appendix B release 1.0

1. Occurrence of initial calibration delay time t_{d,input}

If there is no input signal (standstill), a new initial calibration is triggered each 0.7s. This calibration has a duration $t_{d,input}$ of max. 300µs. No input signal change is detected during that initial calibration time.

In normal operation (signal startup) the probability of $t_{d,input}$ to come into effect is: $t_{d,input}$ / time frame for new calibration 300µs/700ms = 0,05%.

After IC resets (e.g. after a significant undervoltage) t_{d,input} will always come into effect.

2. Magnetic input signal extremely close to a switching threshold of PGA at signal startup:

After signal startup generally all PGA switching into the appropriate gain state happens within less than one signal period. This is included in the calculation for $n_{DZ-Start}$. For the very rare case that the signal amplitude is extremely close to a PGA switching threshold and the full range of following speed ADC respectively, a slight change of the signal amplitude *can* cause one further PGA switching. It can be caused by non-perfect magnetic signal (e.g. amplitude modulation due to tolerances of pole-wheel, tooth wheel or air gap variation). This additional PGA switching *can* result in a further delay of the output signal ($n_{DZ-Start}$) up to three magnetic edges leading to a worst case of $n_{DZ-Start}=9$. Due to the low probability of this case it is not defined as max. value in the data sheet.

(For a more detailed explanation please refer to the document "TLE4941/42 - Frequently Asked Questions").

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